

2/12/02

RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/056,454
Source: OPE
Date Processed by STIC: 2/15/2002

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.1 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Raw Sequence Listing Error Summary

ERROR DETECTED **SUGGESTED CORRECTION** SERIAL NUMBER: 10/056,454

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 ☐ **Wrapped Nucleics
Wrapped Aminos** The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
- 2 ☐ **Invalid Line Length** The rules require that a line not exceed 72 characters in length. This includes white spaces.
- 3 ☐ **Misaligned Amino
Numbering** The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
- 4 ☒ **Non-ASCII** The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
- 5 ☐ **Variable Length** Sequence(s) _____ contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6 ☐ **PatentIn 2.0
"bug"** A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
- 7 ☐ **Skipped Sequences
(OLD RULES)** Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
This sequence is intentionally skipped

Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
- 8 ☐ **Skipped Sequences
(NEW RULES)** Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence.
<210> sequence id number
<400> sequence id number
000
- 9 ☐ **Use of n's or Xaa's
(NEW RULES)** Use of n's and/or Xaa's have been detected in the Sequence Listing.
Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
- 10 ☐ **Invalid <213>
Response** Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
- 11 ☐ **Use of <220>** Sequence(s) _____ missing the <220> "Feature" and associated numeric identifiers and responses.
Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
- 12 ☐ **PatentIn 2.0
"bug"** Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
- 13 ☐ **Misuse of n** n can only be used to represent a single nucleotide in a nucleic acid sequence. N is not used to represent any value not specifically a nucleotide.



OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/056,454

DATE: 02/15/2002

TIME: 14:39:23

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

Does Not Contain
Corrected Diskette Needed

SEQUENCE LISTING

4 (1) GENERAL INFORMATION:

E--> 6 (i) APPLICANT:

15 (ii) TITLE OF INVENTION: Improvements in or Relating to Plant Starch

16 Composition

18 (iii) NUMBER OF SEQUENCES: 20

E--> 0 (iv) CORRESPONDENCE ADDRESS:

9 (B) STREET: 501 Silverside Road, Suite 27

10 (C) CITY: Wilmington

11 (D) STATE: Delaware

12 (E) COUNTRY: United States of America

C--> 13 (F) ZIP: 19809

C--> 20 (v) COMPUTER READABLE FORM:

21 (A) MEDIUM TYPE: Floppy disk

22 (B) COMPUTER: IBM PC compatible

23 (C) OPERATING SYSTEM: PC-DOS/MS-DOS

24 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

C--> 0 (vi) CURRENT APPLICATION DATA:

C--> 0 (A) APPLICATION NUMBER: US/10/056,454

C--> 0 (B) FILING DATE: 24-Jan-2002

C--> 0 (viii) ATTORNEY/AGENT INFORMATION:

7 (A) NAME: National Starch and Chemical Investment

8 Holding Corporation

see p. 20

also,
see item 4
on Encl
Summary Sheet

ERRORED SEQUENCES

27 (2) INFORMATION FOR SEQ ID NO: 1:

29 (i) SEQUENCE CHARACTERISTICS:

30 (A) LENGTH: 57 base pairs

31 (B) TYPE: nucleic acid

32 (C) STRANDEDNESS: single

33 (D) TOPOLOGY: linear

39 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

E--> 41 AAGGATCCGT CGACATCGAT AATACGACTC ACTATAGGGA TTTTTTTTTT

42 TTTTTT 57

204 (2) INFORMATION FOR SEQ ID NO: 12:

206 (i) SEQUENCE CHARACTERISTICS:

207 (A) LENGTH: 3003 base pairs

208 (B) TYPE: nucleic acid

209 (C) STRANDEDNESS: single

210 (D) TOPOLOGY: linear

216 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

global format error

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

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E--> 218 GATGGGGCCT TGAACCTCAGC AATTTGACAC TCAGTTAGTT ACACTGCCAT
      219 CACTTATCAG      60
E--> 221 ATCTCTATTT TTTCTCTTAA TTCCAACCAA GGAATGAATA AAAAGATAGA
      222 TTTGTAAAAA      120
E--> 224 CCCTAAGGAG AGAAGAAGAA AGATGGTGTA TACACTCTCT GGAGTTCGTT
      225 TTCCTACTGT      180
E--> 227 TCCATCAGTG TACAAATCTA ATGGATTGAG CAGTAATGGT GATCGGAGGA
      228 ATGCTAATAT      240
E--> 230 TTCTGTATTC TTGAAAAAAC ACTCTCTTTC ACGGAAGATC TTGGCTGAAA
      231 AGTCTTCTTA      300
E--> 233 CAATTCCGAA TCCCGACCTT CTACAATTGC AGCATCGGGG AAAGTCCTTG
      234 TGCCTGGAAT      360
E--> 236 CCAGAGTGAT AGCTCCTCAT CCTCAACAGA TCAATTTGAG TTCGCTGAGA
      237 CATCTCCAGA      420
E--> 239 AAATTCCTCA GCATCAACTG ATGTAGATAG TTCAACAATG GAACACGCTA
      240 GCCAGATTAA      480
E--> 242 AACTGAGAAC GATGACGTTG AGCCGTCAAG TGATCTTACA
      243 GGAAGTGTTG AAGAGCTGGA      540
E--> 245 TTTTGCTTCA TCACTACAAC TACAAGAAGG TGGTAAACTG GAGGAGTCTA
      246 AAACATTAAA      600
E--> 248 TACTTCTGAA GAGACAATTA TTGATGAATC TGATAGGATC AGAGAGAGGG
      249 GCATCCCTCC      660
E--> 251 ACCTGGACTT GGTGAGAAGA TTTATGAAAT AGACCCCTTT TTGACAAACT
      252 ATCGTCAACA      720
E--> 254 CTTTGATTAC AGGTATTTCAC AGTACAAGAA ACTGAGGGAG GCAATTGACA
      255 AGTATGAGGG      780
E--> 257 TGGTTTGGAA GCTTTTCTCT GTGGTTATGA AAGAATGGGT TTCACTCGTA
      258 GTGCTACAGG      840
E--> 260 TATCACTTAC CGTGAGTGGG CTCCTGGTGC CCAGTCAGCT
      261 GCCCTCATTG GGGATTTCAG      900
E--> 263 CAATTGGGAC GCAAATGCTG ACTTTATGAC TCGGAATGAA TTTGGTGTCT
      264 GAGAGATTTT      960
E--> 266 TCTGCCAAAT AATGTGGATG GTTCTCCTGC AATTCCTCAT GGGTCCAGAG
      267 TGAAGATACG      1020
E--> 269 TATGGACACT CCATCAGGTG TTAAGGATTC CATTCCTGCT TGGATCAACT
      270 ACTCTTTACA      1080
E--> 272 GCTTCCTGAT GAAATTCAT ATAATGGAAT ATATTATGAT CCACCCGAAG
      273 AGGAGAGGTA      1140
E--> 275 TATCTTCCAA CACCCACGGC CAAAGAAACC AAAGTCGGTG AGAATATATG
      276 AATCTCATAT      1200
E--> 278 TGGAAATGAGT AGTCCGGAGC CTAAAATTAA CTCATACGTG AATTTTAGAG
      279 ATGAAGTTCT      1260
E--> 281 TCCTCGCATA AAAAAAGCTT GGGTACAATG CGGTGCAAAT TATGGCTATT
      282 CAAGAGCATT      1320
E--> 284 CTTATTATGC TAGTTTTGGT TATCATGTCA CAAATTTTTT TGCACCAAGC
      285 AGCCGTTTTG      1380
E--> 287 GAACGCCCGA CGACCTTAAG TCTTTGATTG ATAAAGCTCA TGAGCTAGGA
      288 ATTGTTGTTC      1440
E--> 290 TCATGGACAT TGTTACAGC CATGCATCAA ATAATACTTT AGATGGACTG

```

Name
error

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

291 AACATGTTTG 1500
 E--> 293 ACGGCACAGA TAGTTGTTAC TTTCACCTCG GAGCTCGTGG TTATCATTGG
 294 ATGTGGGATT 1560
 E--> 296 TCCGCCTCTT TAACTATGGA AACTGGGAGG TACTTAGGTA TCTTCTCTCA
 297 AATGCGAGAT 1620
 E--> 299 GGTGGTTGGA TGAGTTCAAA TTTGATGGAT TTAGATTTGA TGGTGTGACA
 300 TCAATGATGT 1680
 E--> 302 GTACTCACCA CGGATTATCG GTGGGATTCA CTGGGAACCTA
 303 CGAGGAATAC TTTGGACTCG 1740
 E--> 305 CAACTGATGT GGATGCTGTT GTGTATCTGA TGCTGGTCAA CGATCTTATT
 306 CATGGGCTTT 1800
 E--> 308 TCCCAGATGC AATTACCATT GGTGAAGATG TTAGCGGAAT GCCGACATTT
 309 TGTGTTCCCG 1860
 E--> 311 TTCAAGATGG GGGTGTGTC TTTGACTATC GGCTGCATAT GGCAATTGCT
 312 GATAAATGGA 1920
 E--> 314 TTGAGTTGCT CAAGAAACGG GATGAGGATT GGAGAGTGGG
 315 TGATATTGTT CATACTGTA 1980
 E--> 317 CAAATAGAAG ATGGTCGGAA AAGTGTGTTT CATACGCTGA AAGTCATGAT
 318 CAAGCTCTAG 2040
 E--> 320 TCGGTGATAA AACTATAGCA TTCTGGCTGA TGGACAAGGA TATGTATGAT
 321 TTTATGGCTC 2100
 E--> 323 TGGATAGACC GTCAACATCA TTAATAGATC GTGGGATAGC ATTACACAAG
 324 ATGATTAGGC 2160
 E--> 326 TTGTAACAT GGGATTAGGA GGAGAAGGGT ACCTAAATTT CATGGGAAAT
 327 GAATTCGGCC 2220
 E--> 329 ACCCTGAGTG GATTGATTTT CCTAGGGCTG AACAAACCT CTCTGATGGC
 330 TCAGTAATTC 2280
 E--> 332 CCAGAAACCA ATTCAGTTAT GATAAATGCA GACGGAGATT TGACCTGGGA
 333 GATGCAGAAT 2340
 E--> 335 ATTTAAGATA CCGTGGGTTG CAAGAATTTG ACCGGGCTAT GCAGTATCTT
 336 GAAGATAAAT 2400
 E--> 338 ATGAGTTTAT GACTTCAGAA CACCAGTTCA TATCACGAAA GGATGAAGGA
 339 GATAGGATGA 2460
 E--> 341 TTGTATTTGA AAAAGGAAAC CTAGTTTTTG TCTTTAATTT TCACTGGACA
 342 AAAGGCTATT 2520
 E--> 344 CAGACTATCG CATAGGCTGC CTGAAGCCTG GAAAATACAA
 345 GGTTGCCTTG GACTCAGATG 2580
 E--> 347 ATCCACTTTT TGGTGGCTTC GGGAGAATTG ATCATAATGC CGAATATTTT
 348 ACCTTTGAAG 2640
 E--> 350 GATGGTATGA TGATCGTCCT CGTTCAATTA TGGTGTATGC ACCTAGTAGA
 351 ACAGCAGTGG 2700
 E--> 353 TCTATGCACT AGTAGACAAA GAAGAAGAAG AAGAAGAAGA AGTAGCAGTA
 354 GTAGAAGAAG 2760
 E--> 356 TAGTAGTAGA AGAAGAATGA ACGAACTTGT GATCGCGTTG AAAGATTTGA
 357 ACGCCACATA 2820
 E--> 359 GAGCTTCTTG ACGTATCTGG CAATATTGCA TTAGTCTTGG CGGAATTTCA
 360 TGTGACAACA 2880
 E--> 362 GGTTCGAAT TCTTCCACT ATTAGTAGTG CAACGATATA CGCAGAGATG
 363 AAGTGCTGAA 2940

same

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

E--> 365 CAAAAACATA TGTAATTCG ATGAATTTAT GTCGAATGCT GGGACGATCG
 366 AATTCCTGCA 3000
 368 GCC
 370 (2) INFORMATION FOR SEQ ID NO: 13:
 372 (i) SEQUENCE CHARACTERISTICS:
 373 (A) LENGTH: 2975 base pairs
 374 (B) TYPE: nucleic acid
 375 (C) STRANDEDNESS: single
 376 (D) TOPOLOGY: linear
 382 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
 E--> 384 TTGATGGGCC TTGAACTCAG CAATTTGACA CTCAGTTAGT TACACTCCTA
 385 TCACCTATCA 60
 E--> 387 GATCTCTATT TTTTCTCTTA ATTCCAACCA GGGGAATGAA TAAAAGGATA
 388 GATTGTGAAA 120
 E--> 390 AACCCTAAGG AGAGAAGAAG AAAGATGGTG TATATACTCT CTGGAGTTCTG
 391 TTTTCCTACT 180
 E--> 393 GTTCCATCAG TGTACAAATC TAATGGATTC AGCAGTAATG GTGATCGGAG
 394 GAATGCTAAT 240
 E--> 396 GTTTCTGTAT TCTTGAAAAA GCACTCTCTT TCACGGAAGA TCTTGGCTGA
 397 AAAGTCTTCT 300
 E--> 399 TACAATTCGG AATTCGGACC TTCTACAGTT GCAGCATCGG GGAAAGTCCT
 400 TGTGCCTGGA 360
 E--> 402 ACCCAGAGTG ATAGCTCCTC ATCCTCAACA GACCAATTTG AGTTCACCTGA
 403 GACATCTCCA 420
 E--> 405 GAAAATTCCT CAGCATCAAC TGATGTAGAT AGTTCAACAA TGGAACACGC
 406 TAGCCAGATT 480
 E--> 408 AAAACTGAGA ACGATGACGT TGAGCCGTCA AGTGATCTTA
 409 CAGGAAGTGT TGAAGAGCTG 540
 E--> 411 GATTTTGCTT CATCACTACA ACTACAAGAA GGTGGTAAAC TGGAGGAGTC
 412 TAAAACATTA 600
 E--> 414 AATACTTCTG AAGAGACAAT TATTGATGAA TCTGATAGGA TCAGAGAGAG
 415 GGGCATCCCT 660
 E--> 417 CCACCTGGAC TTGGTCAGAA GATTTATGAA ATAGACCCCC TTTTGACAAA
 418 CTATCGTCAA 720
 E--> 420 CACCTTGATT ACAGGTATTC ACAGTACAAG AACTGAGGG AGGCAATTGA
 421 CAAGTATGAG 780
 E--> 423 GGTGGTTTGG AAGCTTTTCT CGTGGTTATG AAAAAATGGG TTTCACTCGT
 424 AGTGCTACAG 840
 E--> 426 GTATCACTTA CCGTGAGTGG GCTCCTGGTG CCCAGTCAGC
 427 TGCCCTCATT GGAGATTTCA 900
 E--> 429 ACAATTGGGA CGCAAATGCT GACATTATGA CTCGGAATGA ATTTGGTGTC
 430 TGGGAGATTT 960
 E--> 432 TTCTGCCAAA TAATGTGGAT GGTTCCTCTG CAATTCCTCA TGGGTCCAGA
 433 GTGAAGATAC 1020
 E--> 435 GTATGGACAC TCCATCAGGT GTTAAGGATT CCATTCCTGC TTGGATCAAC
 436 TACTCTTTAC 1080
 E--> 438 AGCTTCCTGA TGAAATTCCTA TATAATGGAA TATATTATGA TCCACCCGAA
 439 GAGGAGAGGT 1140
 E--> 441 ATATCTTCCA ACACCCACGG CCAAAGAAAC CAAAGTCGCT GAGAATATAT

3003

same

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

442 GAATCTCATA 1200
 E--> 444 TTGGAATGAG TAGTCCGGAG CCTAAAATTA ACTCATACGT GAATTTTAGA
 445 GATGAAGTTC 1260
 E--> 447 TTCCTCGCAT AAAAAAGCTT GGGTACAATG CGCTGCGAAT TATGGCTATT
 448 CAAGAGCATT 1320
 E--> 450 CTTATTATGC TAGTTTTGGT TATCATGTCA CAAATTTTTT TGCACCAAGC
 451 AGCCGTTTTG 1380
 E--> 453 GAACGCCCCG CGACCTTAAG TCTTCGATTG ATAAAGCTCA TGAGCTAGGA
 454 ATGTGTGTTT 1440
 E--> 456 TCATGGACAT CGTTCACAGC CATGCATCAA ATAATACTTT AGATGGACTG
 457 AACATGTTTG 1500
 E--> 459 ACGGCACCGA TAGTTGTTAC TTTCACCTCG GAGCTCGTGG TTATCATTGG
 460 ATGTGGGATT 1560
 E--> 462 CCGCCTCTTT AACTATGGAA ACTGGGAGGT ACTTAGGTAT CTTCTCTCAA
 463 ATGCGAGATG 1620
 E--> 465 GTGGTTGGAT GAGTTCAAAT TTGATGGATT TAGATTGAT GGTGTGACAT
 466 CAATGATGTA 1680
 E--> 468 TACTCACCAC GGATTATCGG TGGGATTAC TGGGAACCTAC GAGGAATACT
 469 TTGGAATCGC 1740
 E--> 471 AACTGATGTG GATGCTGTTG TGTATCTGAT GCTGGTCAAC GATCTTATTC
 472 ATAGGCTTTT 1800
 E--> 474 CCCAGATGCA ATTACCATTG GTGAAGATGT TAGCGGAATG CCGACATTTT
 475 GTATTCCCGT 1860
 E--> 477 TCAAGATGGG GGTGTTGGCT TTGACTATCG GCTGCATATG
 478 GCAATTGCTG ATAAATGGAT 1920
 E--> 480 TGAGTTGCTC AAGAAACGGG ATGAGGATTG GAGAGTGGGT
 481 GATATTGTTT ATACACTGAC 1980
 E--> 483 AAATAGAAGA TGGTCGGAAA AGTGTGTTTC ATACGCTGAA AGTCATGATC
 484 AAGCTCTAGT 2040
 E--> 486 CGGTGATAAA ACTATAGCAT TCTGGCTGAT GGACAAGGAT ATGTATGATT
 487 TTATGGCTCT 2100
 E--> 489 GGATAGACCG CCAACATCAT TAATAGATCG TGGGATAGCA TTGCACAAGA
 490 TGATTAGGCT 2160
 E--> 492 TGTAACATG GGATTAGGAG GAGAAGGGTA CCTAAATTTT ATGGGAAATG
 493 AATTCGGCCA 2220
 E--> 495 CCCTGAGTGG ATTGATTTCC CTAGGGCTGA GCCACACCTT TCTGATGGCT
 496 CAGTAATTCC 2280
 E--> 498 CGGAAACCAA TTCAGTTATG ATAAATGCAG ACGGAGATTT
 499 GACCTGGGAG ATGCAGAATA 2340
 E--> 501 TTTAAGATAC CATGGGTTAC AAGAATTTGA CTGGGCTATG CAGTATCTTG
 502 AAGATAAATA 2400
 E--> 504 TGAGTTTATG ACTTCAGAAC ACCAGTTCAT ATCACGAAAG GATGAAGGAG
 505 ATAGGATGAT 2460
 E--> 507 TGTATTTGAA AGAGGAAACC TAGTTTTCGT CTTTAATTTT CACTGGACAA
 508 ATAGCTATTC 2520
 E--> 510 AGACTATCGC ATAGGCTGCC TGAAGCCTGG AAAATACAAG
 511 GTTGTCTTGG ACTCAGATGA 2580
 E--> 513 TCCACTTTTT GGTGGCTTCG GGAGAATTGA TCATAATGCC GAATATTTCA
 514 CCTCTGAAGG 2640

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Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

E--> 516 ATCGTATGAT GATCGTCCTT GTTCAATTAT GGTGTATGCA CCTAGTAGAA
 517 CAGCAGTGGT 2700
 E--> 519 CTATGCACTA GTAGACAAAC TAGAAGTAGC AGTAGTAGAA GAACCCATTG
 520 AAGAATGAAC 2760
 E--> 522 GAACTTGTTGA TCGCGTTGAA AGATTTGAAC GTTACTTGGT CATCCACATA
 523 GAGCTTCTTG 2820
 E--> 525 ACATCAGTCT TGGCGGAATT GCATGTGACA ACAAGGTTTG CAGTTCTTTC
 526 CACTATTAGT 2880
 E--> 528 AGTCCACCGA TATACGCAGA GATGAAGTGC TGAACAAACA TATGTAAAAT
 529 CGATGAATTT 2940
 E--> 531 ATGTCGAATG CTGGGACGAT CGAATTCCTG CAGCC
 W--> 532 2975
 534 (2) INFORMATION FOR SEQ ID NO: 14:
 536 (i) SEQUENCE CHARACTERISTICS:
 537 (A) LENGTH: 3033 base pairs
 538 (B) TYPE: nucleic acid
 539 (C) STRANDEDNESS: single
 540 (D) TOPOLOGY: linear
 544 (ix) FEATURE:
 545 (A) NAME/KEY: CDS
 546 (B) LOCATION:145..2790
 549 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
 E--> 551 TTGATGGGGC CTTGAACTCA GCAATTTGAC ACTCAGTTAG TTACACTCCT
 552 ATCACTTATC 60
 E--> 554 AGATCTCTAT TTTTCTCTT AATTCCAACC AAGGAATGAA TAAAAGGATA
 555 GATTGTAAAA 120
 E--> 557 AACCCTAAGG AGAGAAGAAG AAAG ATG GTG TAT ACA CTC TCT GGA
 558 GTT CGT 171
 559 Met Val Tyr Thr Leu Ser Gly Val Arg
 560 1 5
 E--> 562 TTT CCT ACT GTT CCA TCA GTG TAC AAA TCT AAT GGA TTC AGC AGT
 563 AAT 219
 564 Phe Pro Thr Val Pro Ser Val Tyr Lys Ser Asn Gly Phe Ser Ser Asn
 565 10 15 20 25
 E--> 567 GGT GAT CGG AGG AAT GCT AAT GTT TCT GTA TTC TTG AAA AAG CAC
 568 TCT 267
 569 Gly Asp Arg Arg Asn Ala Asn Val Ser Val Phe Leu Lys Lys His Ser
 570 30 35 40
 E--> 572 CTT TCA CGG AAG ATC TTG GCT GAA AAG TCT TCT TAC AAT TCC GAA
 573 TTC 315
 574 Leu Ser Arg Lys Ile Leu Ala Glu Lys Ser Ser Tyr Asn Ser Glu Phe
 575 45 50 55
 E--> 577 CGA CCT TCT ACA GTT GCA GCA TCG GGG AAA GTC CTT GTG CCT GGA
 578 ACC 363
 579 Arg Pro Ser Thr Val Ala Ala Ser Gly Lys Val Leu Val Pro Gly Thr
 580 60 65 70
 E--> 582 CAG AGT GAT AGC TCC TCA TCC TCA ACA GAC CAA TTT GAG TTC ACT
 583 GAG 411
 584 Gln Ser Asp Ser Ser Ser Ser Ser Thr Asp Gln Phe Glu Phe Thr Glu

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Input Set : A:\EP.txt

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      585      75      80      85
E--> 587 ACA TCT CCA GAA AAT TCC CCA GCA TCA ACT GAT GTA GAT AGT TCA
      588 ACA      459
      589 Thr Ser Pro Glu Asn Ser Pro Ala Ser Thr Asp Val Asp Ser Ser Thr
      590 90      95      100      105
E--> 592 ATG GAA CAC GCT AGC CAG ATT AAA ACT GAG AAC GAT GAC GTT GAG
      593 CCG      507
      594 Met Glu His Ala Ser Gln Ile Lys Thr Glu Asn Asp Asp Val Glu Pro
      595      110      115      120
E--> 597 TCA AGT GAT CTT ACA GGA AGT GTT GAA GAG CTG GAT TTT GCT TCA
      598 TCA      555
      599 Ser Ser Asp Leu Thr Gly Ser Val Glu Glu Leu Asp Phe Ala Ser Ser
      600      125      130      135
E--> 602 CTA CAA CTA CAA GAA GGT GGT AAA CTG GAG GAG TCT AAA ACA TTA
      603 AAT      603
      604 Leu Gln Leu Gln Glu Gly Gly Lys Leu Glu Glu Ser Lys Thr Leu Asn
      605      140      145      150
E--> 607 ACT TCT GAA GAG ACA ATT ATT GAT GAA TCT GAT AGG ATC AGA GAG
      608 AGG      651
      609 Thr Ser Glu Glu Thr Ile Ile Asp Glu Ser Asp Arg Ile Arg Glu Arg
      610      155      160      165
E--> 612 GGC ATC CCT CCA CCT GGA CTT GGT CAG AAG ATT TAT GAA ATA GAC
      613 CCC      699
      614 Gly Ile Pro Pro Pro Gly Leu Gly Gln Lys Ile Tyr Glu Ile Asp Pro
      615 170      175      180      185
E--> 617 CTT TTG ACA AAC TAT CGT CAA CAC CTT GAT TAC AGG TAT TCA CAG
      618 TAC      747
      619 Leu Leu Thr Asn Tyr Arg Gln His Leu Asp Tyr Arg Tyr Ser Gln Tyr
      620      190      195      200
E--> 622 AAG AAA CTG AGG GAG GCA ATT GAC AAG TAT GAG GGT GGT TTG GAA
      623 GCC      795
      624 Lys Lys Leu Arg Glu Ala Ile Asp Lys Tyr Glu Gly Gly Leu Glu Ala
      625      205      210      215
E--> 627 TTT TCT CGT GGT TAT GAA AAA ATG GGT TTC ACT CGT AGT GCT ACA
      628 GGT      843
      629 Phe Ser Arg Gly Tyr Glu Lys Met Gly Phe Thr Arg Ser Ala Thr Gly
      630      220      225      230
E--> 632 ATC ACT TAC CGT GAG TGG GCT CTT GGT GCC CAG TCA GCT GCC CTC
      633 ATT      891
      634 Ile Thr Tyr Arg Glu Trp Ala Leu Gly Ala Gln Ser Ala Ala Leu Ile
      635      235      240      245
E--> 637 GGA GAT TTC AAC AAT TGG GAC GCA AAT GCT GAC ATT ATG ACT CGG
      638 AAT      939
      639 Gly Asp Phe Asn Asn Trp Asp Ala Asn Ala Asp Ile Met Thr Arg Asn
      640 250      255      260      265
E--> 642 GAA TTT GGT GTC TGG GAG ATT TTT CTG CCA AAT AAT GTG GAT GGT
      643 TCT      987
      644 Glu Phe Gly Val Trp Glu Ile Phe Leu Pro Asn Asn Val Asp Gly Ser
      645      270      275      280

```

same

RAW SEQUENCE LISTING

DATE: 02/15/2002

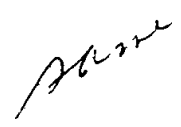
PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

E--> 647 CCT GCA ATT CCT CAT GGG TCC AGA GTG AAG ATA CGT ATG GAC ACT
 648 CCA 1035
 649 Pro Ala Ile Pro His Gly Ser Arg Val Lys Ile Arg Met Asp Thr Pro
 650 285 290 295
 E--> 652 TCA GGT GTT AAG GAT TCC ATT CCT GCT TGG ATC AAC TAC TCT TTA
 653 CAG 1083
 654 Ser Gly Val Lys Asp Ser Ile Pro Ala Trp Ile Asn Tyr Ser Leu Gln
 655 300 305 310
 E--> 657 CTT CCT GAT GAA ATT CCA TAT AAT GGA ATA CAT TAT GAT CCA CCC
 658 GAA 1131
 659 Leu Pro Asp Glu Ile Pro Tyr Asn Gly Ile His Tyr Asp Pro Pro Glu
 660 315 320 325
 E--> 662 GAG GAG AGG TAT ATC TTC CAA CAC CCA CGG CCA AAG AAA CCA AAG
 663 TCG 1179
 664 Glu Glu Arg Tyr Ile Phe Gln His Pro Arg Pro Lys Lys Pro Lys Ser
 665 330 335 340 345
 E--> 667 CTG AGA ATA TAT GAA TCT CAT ATT GGA ATG AGT AGT CCG GAG CCT
 668 AAA 1227
 669 Leu Arg Ile Tyr Glu Ser His Ile Gly Met Ser Ser Pro Glu Pro Lys
 670 350 355 360
 E--> 672 ATT AAC TCA TAC GTG AAT TTT AGA GAT GAA GTT CTT CCT CGC ATA
 673 AAA 1275
 674 Ile Asn Ser Tyr Val Asn Phe Arg Asp Glu Val Leu Pro Arg Ile Lys
 675 365 370 375
 E--> 677 AAG CTT GGG TAC AAT GCG CTG CAA ATT ATG GCT ATT CAA GAG CAT
 678 TCT 1323
 679 Lys Leu Gly Tyr Asn Ala Leu Gln Ile Met Ala Ile Gln Glu His Ser
 680 380 385 390
 E--> 682 TAT TAC GCT AGT TTT GGT TAT CAT GTC ACA AAT TTT TTT GCA CCA
 683 AGC 1371
 684 Tyr Tyr Ala Ser Phe Gly Tyr His Val Thr Asn Phe Phe Ala Pro Ser
 685 395 400 405
 E--> 687 AGC CGT TTT GGA ACG CCC GAC GAC CTT AAG TCT TTG ATT GAT AAA
 688 GCT 1419
 689 Ser Arg Phe Gly Thr Pro Asp Asp Leu Lys Ser Leu Ile Asp Lys Ala
 690 410 415 420 425
 E--> 692 CAT GAG CTA GGA ATT GTT GTT CTC ATG GAC ATT GTT CAC AGC CAT
 693 GCA 1467
 694 His Glu Leu Gly Ile Val Val Leu Met Asp Ile Val His Ser His Ala
 695 430 435 440
 E--> 697 TCA AAT AAT ACT TTA GAT GGA CTG AAC ATG TTT GAC TGC ACC GAT
 698 AGT 1515
 699 Ser Asn Asn Thr Leu Asp Gly Leu Asn Met Phe Asp Cys Thr Asp Ser
 700 445 450 455
 E--> 702 TGT TAC TTT CAC TCT GGA GCT CGT GGT TAT CAT TGG ATG TGG GAT
 703 TCC 1563
 704 Cys Tyr Phe His Ser Gly Ala Arg Gly Tyr His Trp Met Trp Asp Ser
 705 460 465 470
 E--> 707 CGC CTC TTT AAC TAT GGA AAC TGG GAG GTA CTT AGG TAT CTT CTC



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Input Set : A:\EP.txt

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708 TCA      1611
709 Arg Leu Phe Asn Tyr Gly Asn Trp Glu Val Leu Arg Tyr Leu Leu Ser
710      475      480      485
E--> 712 AAT GCG AGA TGG TGG TTG GAT GCG TTC AAA TTT GAT GGA TTT AGA
713 TTT      1659
714 Asn Ala Arg Trp Trp Leu Asp Ala Phe Lys Phe Asp Gly Phe Arg Phe
715 490      495      500      505
E--> 717 GAT GGT GTG ACA TCA ATG ATG TAT ATT CAC CAC GGA TTA TCG GTG
718 GGA      1707
719 Asp Gly Val Thr Ser Met Met Tyr Ile His His Gly Leu Ser Val Gly
720      510      515      520
E--> 722 TTC ACT GGG AAC TAC GAG GAA TAC TTT GGA CTC GCA ACT GAT GTG
723 GAT      1755
724 Phe Thr Gly Asn Tyr Glu Glu Tyr Phe Gly Leu Ala Thr Asp Val Asp
725      525      530      535
E--> 727 GCT GTT GTG TAT CTG ATG CTG GTC AAC GAT CTT ATT CAT GGG CTT
728 TTC      1803
729 Ala Val Val Tyr Leu Met Leu Val Asn Asp Leu Ile His Gly Leu Phe
730      540      545      550
E--> 732 CCA GAT GCA ATT ACC ATT GGT GAA GAT GTT AGC GGA ATG CCG ACA
733 TTT      1851
734 Pro Asp Ala Ile Thr Ile Gly Glu Asp Val Ser Gly Met Pro Thr Phe
735      555      560      565
E--> 737 TGT ATT CCC GTC CAA GAG GGG GGT GTT GGC TTT GAC TAT CGG CTG
738 CAT      1899
739 Cys Ile Pro Val Gln Glu Gly Gly Val Gly Phe Asp Tyr Arg Leu His
740 570      575      580      585
E--> 742 ATG GCA ATT GCT GAT AAA CGG ATT GAG TTG CTC AAG AAA CGG GAT
743 GAG      1947
744 Met Ala Ile Ala Asp Lys Arg Ile Glu Leu Leu Lys Lys Arg Asp Glu
745      590      595      600
E--> 747 GAT TGG AGA GTG GGT GAT ATT GTT CAT ACA CTG ACA AAT AGA AGA
748 TGG      1995
749 Asp Trp Arg Val Gly Asp Ile Val His Thr Leu Thr Asn Arg Arg Trp
750      605      610      615
E--> 752 TCG GAA AAG TGT GTT TCA TAC GCT GAA AGT CAT GAT CAA GCT CTA
753 GTC      2043
754 Ser Glu Lys Cys Val Ser Tyr Ala Glu Ser His Asp Gln Ala Leu Val
755      620      625      630
E--> 757 GGT GAT AAA ACT ATA GCA TTC TGG CTG ATG GAC AAG GAT ATG TAT
758 GAT      2091
759 Gly Asp Lys Thr Ile Ala Phe Trp Leu Met Asp Lys Asp Met Tyr Asp
760      635      640      645
E--> 762 TTT ATG GCT CTG GAT AGA CCG TCA ACA TCA TTA ATA GAT CGT GGG
763 ATA      2139
764 Phe Met Ala Leu Asp Arg Pro Ser Thr Ser Leu Ile Asp Arg Gly Ile
765 650      655      660      665
E--> 767 GCA TTG CAC AAG ATG ATT AGG CTT GTA ACT ATG GGA TTA GGA GGA
768 GAA      2187

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Input Set : A:\EP.txt

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769 Ala Leu His Lys Met Ile Arg Leu Val Thr Met Gly Leu Gly Gly Glu
770          670          675          680
E--> 772 GGG TAC CTA AAT TTC ATG GGA AAT GAA TTC GGC CAC CCT GAG TGG
773 ATT          2235
774 Gly Tyr Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro Glu Trp Ile
775          685          690          695
E--> 777 GAT TTC CCT AGG GCT GAA CAA CAC CTC TCT GAT GGC TCA GTA ATC
778 CCC          2283
779 Asp Phe Pro Arg Ala Glu Gln His Leu Ser Asp Gly Ser Val Ile Pro
780          700          705          710
E--> 782 GGA AAC CAA TTC AGT TAT GAT AAA TGC AGA CGG AGA TTT GAC CTG
783 GGA          2331
784 Gly Asn Gln Phe Ser Tyr Asp Lys Cys Arg Arg Arg Phe Asp Leu Gly
785          715          720          725
E--> 787 GAT GCA GAA TAT TTA AGA TAC CGT GGG TTG CAA GAA TTT GAC CGG
788 CCT          2379
789 Asp Ala Glu Tyr Leu Arg Tyr Arg Gly Leu Gln Glu Phe Asp Arg Pro
790 730          735          740          745
E--> 792 ATG CAG TAT CTT GAA GAT AAA TAT GAG TTT ATG ACT TCA GAA CAC
793 CAG          2427
794 Met Gln Tyr Leu Glu Asp Lys Tyr Glu Phe Met Thr Ser Glu His Gln
795          750          755          760
E--> 797 TTC ATA TCA CGA AAG GAT GAA GGA GAT AGG ATG ATT GTA TTT GAA
798 AAA          2475
799 Phe Ile Ser Arg Lys Asp Glu Gly Asp Arg Met Ile Val Phe Glu Lys
800          765          770          775
E--> 802 GGA AAC CTA GTT TTT GTC TTT AAT TTT CAC TGG ACA AAA AGC TAT
803 TCA          2523
804 Gly Asn Leu Val Phe Val Phe Asn Phe His Trp Thr Lys Ser Tyr Ser
805          780          785          790
E--> 807 GAC TAT CGC ATA GCC TGC CTG AAG CCT GGA AAA TAC AAG GTT GCC
808 TTG          2571
809 Asp Tyr Arg Ile Ala Cys Leu Lys Pro Gly Lys Tyr Lys Val Ala Leu
810          795          800          805
E--> 812 GAC TCA GAT GAT CCA CTT TTT GGT GGC TTC GGG AGA ATT GAT CAT
813 AAT          2619
814 Asp Ser Asp Asp Pro Leu Phe Gly Gly Phe Gly Arg Ile Asp His Asn
815 810          815          820          825
E--> 817 GCC GAA TAT TTC ACC TTT GAA GGA TGG TAT GAT GAT CGT CCT CGT
818 TCA          2667
819 Ala Glu Tyr Phe Thr Phe Glu Gly Trp Tyr Asp Asp Arg Pro Arg Ser
820          830          835          840
E--> 822 ATT ATG GTG TAT GCA CCT TGT AAA ACA GCA GTG GTC TAT GCA CTA
823 GTA          2715
824 Ile Met Val Tyr Ala Pro Cys Lys Thr Ala Val Val Tyr Ala Leu Val
825          845          850          855
E--> 827 GAC AAA GAA GAA GAA GAA GAA GAA GAA GAA GAA GAA GTA GCA
828 GCA          2763
829 Asp Lys Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Val Ala Ala

```

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Input Set : A:\EP.txt

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```

      830          860          865          870
E--> 832 GTA GAA GAA GTA GTA GTA GAA GAA GAA TGAACGAACT TGTGATCGCG
W--> 833 2810
      834 Val Glu Glu Val Val Val Glu Glu Glu
W--> 835      875          880
E--> 837 TTGAAAGATT TGAACGCTAC ATAGAGCTTC TTGACGTATC TGGCAATATT
      838 GCATCAGTCT      2870
E--> 840 TGGCGGAATT TCATGTGACA CAAGGTTTGC AATTCTTTCC ACTATTAGTA
      841 GTGCAACGAT      2930
E--> 843 ATACGCAGAG ATGAAGTGCT GAACAAACAT ATGTAAAATC GATGAATTTA
      844 TGTCGAATGC      2990
E--> 846 TGGGACGATC GAATTCCTGC AGGCCGGGGG ACCCCTTAGT TCT
W--> 847 3033
1028 (2) INFORMATION FOR SEQ ID NO: 16:
1030 (i) SEQUENCE CHARACTERISTICS:
1031 (A) LENGTH: 2576 base pairs
1032 (B) TYPE: nucleic acid
1033 (C) STRANDEDNESS: single
1034 (D) TOPOLOGY: linear
1040 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
E--> 1042 TCATTAAAGA GGAGAAATTA ACTATGAGAG GATCTCACCA TCACCATCAC
      1043 CATGGGATCT      60
E--> 1045 TGGCTGAAAA GTCTTCTTAC AATTCCGAAT TCCGACCTTC TACAGTTGCA
      1046 GCATCGGGGA      120
E--> 1048 AAGTCCTTGT GCCTGGAACC CAGAGTGATA GCTCCTCATC CTCAACAAAC
      1049 CAATTTGAGT      180
E--> 1051 TCACTGAGAC ATCTCCAGAA AATTCCCCAG CATCAACTGA TGTAGATAGT
      1052 TCAACAATGG      240
E--> 1054 AACACGCTAG CCAGATTAAA ACTGAGAACG ATGACGTTGA
      1055 GCCGTCAAGT GATCTTACAG      300
E--> 1057 GAAGTGTTGA AGAGCTGGAT TTTGCTTCAT CACTACAAC TACAAGAAGGT
      1058 GGTAACCTGG      360
E--> 1060 AGGAGTCTAA AACATTAAAT ACTTCTGAAG AGACAATTAT TGATGAATCT
      1061 GATAGGATCA      420
E--> 1063 GAGAGAGGGG CATCCCTCCA CCTGGACTTG GTCAGAAGAT
      1064 TTATGAAATA GACCCCTTT      480
E--> 1066 TGACAAACTA TCGTCAACAC CTTGATTACA GGTATTCACA GTACAAGAAA
      1067 CTGAGGGGAGG      540
E--> 1069 CAATTGACAA GTATGAGGGT GGTTTGGAAG CTTTTTCTCG TGGTTATGAA
      1070 AAAATGGGTT      600
E--> 1072 TCACTCGTAG TGCTACAGGT ATCACTTACC GTGAGTGGGC
      1073 TCCTGGTGCC CAGTCAGCTG      660
E--> 1075 CCCTCATTGG AGATTTCAAC AATTGGGACG CAAATGCTGA CATTATGACT
      1076 CGGAATGAAT      720
E--> 1078 TTGGTGTCTG GGAGATTTTT CTGCCAAATA ATGTGGATGG TTCTCCTGCA
      1079 ATTCCTCATG      780
E--> 1081 GGTCCAGAGT GAAGATACGT ATGGACACTC CATCAGGTGT
      1082 TAAGGATTCC ATTCCTGCTT      840
E--> 1084 GGATCAACTA CTCTACAGCT TCCTGATGAA ATTCCATATA ATGGAATATA

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Input Set : A:\EP.txt

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1085 TTATGATCCA      900
E--> 1087 CCCGAAGAGG AGAGGTATAT CTTCCAACAC CCACGGCCAA
1088 AGAAACCAAA GTCGCTGAGA      960
E--> 1090 ATATATGAAT CTCATATTGG AATGAGTAGT CCGGAGCCTA AAATTAACCTC
1091 ATACGTGAAT      1020
E--> 1093 TTTAGAGATG AAGTTCTTCC TCGCATAAAA AAGCTTGGGT ACAATGCGCT
1094 GCAAATTATG      1080
E--> 1096 GCTATTCAAG AGCATTCTTA TTATGCTAGT TTTGGTTATC ATGTCACAAA
1097 TTTTTTTGCA      1140
E--> 1099 CCAAGCAGCC GTTTTGGAAC GCCCGACGAC CTTAAGTCTT TGATTGATAA
1100 AGCTCATGAG      1200
E--> 1102 CTAGGAATTG TTGTTCTCAT GGACATTGTT CACAGCCATG CATCAAATAA
1103 TACTTTAGAT      1260
E--> 1105 GGACTGAACA TGTTTGACGG CACCGATAGT TGTTACTTTC ACTCTGGAGC
1106 TCGTGGTTAT      1320
E--> 1108 CATTGGATGT GGGATTCCCG CCTTTTAAAC TATGGAAACT GGGAGGTACT
1109 TAGGTATCTT      1380
E--> 1111 CTCTCAAATG CGAGATGGTG GTTGGATGAG TTCAAATTTG ATGGATTTAG
1112 ATTTGATGGT      1440
E--> 1114 GTGACATCAA TGATGTATAC TCACCACGGA TTATCGGTGG GATTCACTGG
1115 GAACTACGAG      1500
E--> 1117 GAATACTTTG GACTCGCAAC TGATGTGGAT GCTGTTGTGT ATCTGATGCT
1118 GGTCAACGAT      1560
E--> 1120 CTTATTCATG GGCTTTTCCC AGATGCAATT ACCATTGGTG AAGATGTTAG
1121 CGGAATGCCG      1620
E--> 1123 ACATTTTGTA TTCCCGTTCA AGATGGGGGT GTTGGCTTTG ACTATCGGCT
1124 GCATATGGCA      1680
E--> 1126 ATTGCTGATA AATGGATTGA GTTGCTCAAG AAACGGGATG
1127 AGGATTGGAG AGTGGGTGAT      1740
E--> 1129 ATTGTTTATA CACTGACAAA TAGAAGATGG TCGGAAAAGT GTGTTTCATA
1130 CGCTGAAAGT      1800
E--> 1132 CATGATCAAG CTCTAGTCGG TGATAAAACT ATAGCATTCT GGCTGATGGA
1133 CAAGGATATG      1860
E--> 1135 TATGATTTTA TGGCTCTGGA TAGACCGCCA ACATCATTA TAGATCGTGG
1136 GATAGCATTG      1920
E--> 1138 CACAAGATGA TTAGGCTTGT AACTATGGGA TTAGGAGGAG
1139 AAGGGTACCT AAATTTTCATG      1980
E--> 1141 GGAAATGAAT TCGGCCACCC TGAGTGGATT GATTTCCCTA
1142 GGGCTGAACA ACACCTCTCT      2040
E--> 1144 GATGACTCAG TAATTCCCGG AAACCAATTC AGTTATGATA AATGCAGACG
1145 GAGATTTGAC      2100
E--> 1147 CTGGGAGATG CAGAATATTT AAGATACCGT GGGTTGCAAG AATTTGACCG
1148 GGCTATGCAG      2160
E--> 1150 TATCTTGAAG ATAAATATGA GTTTATGACT TCAGAACACC AGTTCATATC
1151 ACGAAAGGAT      2220
E--> 1153 GAAGGAGATA GGATGATTGT ATTTGAAAAA GGAAACCTAG TTTTGTCTT
1154 TAATTTTCAC      2280
E--> 1156 TGGACAAAAA GCTATTCAGA CTATCGCATA GGCTGCCTGA AGCCTGGAAA
1157 ATACAAGGTT      2340

```

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Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

```

E--> 1159 GCCTTGGACT CAGATGATCC ACTTTTGGT GGCTTCGGGA GAATTGATCA
      1160 TAATGCCGAA      2400
E--> 1162 TATTTACCTT TTGAAGGATG GTATGATGAT CGTCCTCGTT CAATTATGGT
      1163 GTATGCACCT      2460
E--> 1165 TGTAAGACAG CAGTGGTCTA TGCACTAGTA GACAAAGAAG
      1166 AAGAAGAAGA AGAAGAAGAA      2520
E--> 1168 GAAGAAGTAG CAGTAGTAGA AGAAGTAGTA GTAGAAGAAG
      1169 AATGAACGAA CTTGTG      2576
      1171 (2) INFORMATION FOR SEQ ID NO: 17:
      1173 (i) SEQUENCE CHARACTERISTICS:
      1174 (A) LENGTH: 2529 base pairs
      1175 (B) TYPE: nucleic acid
      1176 (C) STRANDEDNESS: single
      1177 (D) TOPOLOGY: linear
      1183 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
E--> 1185 GGATGCTAAT GTTTCTGTAT TCTTGAAAAA GCACTCTCTT TCACGGAAGA
      1186 TCTTGGCTGA      60
E--> 1188 AAAGTCTTCT TACAATTCGG AATCCCGACC TTCTACAGTT GCAGCATCGG
      1189 GGAAAGTCCT      120
E--> 1191 TGTGCCTGGA AYCCAGAGTG ATAGCTCCTC ATCCTCAACA GACCAATTTG
      1192 AGTTCACTGA      180
E--> 1194 GACATCTCCA GAAAATTCCC CAGCATCAAC TGATGTAGAT AGTTCAACAA
      1195 TGGAACACGC      240
E--> 1197 TAGCCAGATT AAAACTGAGA ACGATGACGT TGAGCCGTCA AGTGATCTTA
      1198 CAGGAAGTGT      300
E--> 1200 TGAAGAGCTG GATTTTGCTT CATCACTACA ACTACAAGAA GGTGGTAAAC
      1201 TGGAGGAGTC      360
E--> 1203 TAAAACATTA AATACTTCTG AAGAGACAAT TATTGATGAA TCTGATAGGA
      1204 TCAGAGAGAG      420
E--> 1206 GGGCATCCCT CCACCTGGAC TTGGTCAGAA GATTTATGAA
      1207 ATAGACCCCT TTTTGACAAA      480
E--> 1209 CTATCGTCAA CACCTTGATT ACAGGTATTC ACAGTACAAG AAACCTGAGGG
      1210 AGGCAATTGA      540
E--> 1212 CAAGTATGAG GGTGGTTTGG AAGCTTTTTC TCGTGGTTAT GAAAAAATGG
      1213 GTTTCACCTG      600
E--> 1215 TAGTGCTACA GGTATCACTT ACCGTGAGTG GGCTCCTGGT
      1216 GCCCAGTCAG CTGCCCTCAT      660
E--> 1218 TGGAGATTTC AACAATTGGG ACGCAAATGC TGACATTATG ACTCGGAATG
      1219 AATTTGGTGT      720
E--> 1221 CTGGGAGATT TTTCTGCCAA ATAATGTGGA TGGTTCTCCT GCAATTCCTC
      1222 ATGGGTCCAG      780
E--> 1224 AGTGAAGATA CGYATGGACA CTCCATCAGG TGTTAAGGAT TCCATTCCTG
      1225 CTTGGATCAA      840
E--> 1227 CTACTCTTTA CAGCTTCCTG ATGAAATTCC ATATAATGGA ATATATTATG
      1228 ATCCACCCGA      900
E--> 1230 AGAGGAGAGG TATRTCTTCC AACACCCACG GCCAAAGAAA
      1231 CCAAAGTCGC TGAGAATATA      960
E--> 1233 TGAATCTCAT ATTGGAATGA GTAGTCCGGA GCCTAAAATT AACTCATACG
      1234 TGAATTTTAG      1020

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Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

E--> 1236 AGATGAAGTT CTTCTCGCA TAAAAAASCT TGGGTACAAT GCGGTGCAAA
 1237 TTATGGCTAT 1080
 E--> 1239 TCAAGAGCAT TCTTATTATG CTAGTTTTGG TTATCATGTC ACAAATTTTT
 1240 TTGCACCAAG 1140
 E--> 1242 CAGCCGTTTT GGAACGCCCCG ACGACCTTAA GTCTTTGATT GATAAAGCTC
 1243 ATGAGCTAGG 1200
 E--> 1245 AATTGTTGTT CTCATGGACA TTGTTACAG CCATGCATCA AATAATACTT
 1246 TAGATGGACT 1260
 E--> 1248 GAACATGTTT GACGGCACAG ATAGTTGTTA CTTTCACTCT GGAGCTCGTG
 1249 GTTATCATTG 1320
 E--> 1251 GATGTGGGAT TCCCGCCTCT TTAACATATGG AAACGTTGGAG GTACTTAGGT
 1252 ATCTTCTCTC 1380
 E--> 1254 AAATGCGAGA TGGTGGTTGG ATGAGTTCAA ATTTGATGGA TTTAGATTTG
 1255 ATGGTGTGAC 1440
 E--> 1257 ATCAATGATG TATACTCACC ACGGATTATC GGTGGGATTC ACTGGGAAC
 1258 ACGAGGAATA 1500
 E--> 1260 CTTTGGACTC GCAACTGATG TGGATGCTGT TGTGTATCTG ATGCTGGTCA
 1261 ACGATCTTAT 1560
 E--> 1263 TCACGGGCTT TTCCAGATG CAATTACCAT TGGTGAAGAT GTTAGCGGAA
 1264 TGCCGACATT 1620
 E--> 1266 TTGTATTCCC GTTCAAGATG GGGGTGTTGG CTTTGAATAT CGGCTGCATA
 1267 TGGCAATTGC 1680
 E--> 1269 TGATAAATGG ATTGAGTTGC TCAAGAAACG GGATGAGGAT
 1270 TGGAGAGTGG GTGATATTGT 1740
 E--> 1272 TCATACACTG ACAAATAGAA GATGGTCGGA AAAGTGTGTT TCATMCGCTG
 1273 AAAGTCATGA 1800
 E--> 1275 TCAAGCTCTA GTCGGTGATA AAACATATAGC ATYCTGGCTG ATGGACAAGG
 1276 ATATGTATGA 1860
 E--> 1278 TTTTATGGCT CTGGATAGAC CGYCAACAYC ATTAATAGAT CGTGGGATAG
 1279 CATTGCACAA 1920
 E--> 1281 GATGATTAGG CTTGTAACTA TGGGATTAGG AGGAGAAGGG TACCTAAATT
 1282 TCATGGGAAA 1980
 E--> 1284 TGAATTCGGC CACCCTGAGT GGATTGATTT CCCTAGGGCT
 1285 GARCAACACC TCTCTGATGG 2040
 E--> 1287 CTCAGTAATT CCCGAAACC AATTCAGTTA TGATAAATGC AGACGGAGAT
 1288 TTGACCTGGG 2100
 E--> 1290 AGATGCAGAA TATTTAAGAT ACCATGGGTT GCAAGAATTT GACCGGGCTA
 1291 TGCAGTATCT 2160
 E--> 1293 TGAAGATAAA TATGAGTTTA TGAATTCAGA ACACCAGTTC ATATCACGAA
 1294 AGGATGAAGG 2220
 E--> 1296 AGATAGGATG ATTGTATTTG AAARAGGAAA CCTAGTTTTT GTCTTTAATT
 1297 TTCCTGGAC 2280
 E--> 1299 AAATAGCTAT TCAGACTATC GCATAGGCTG CCTGAAGCCT GGAAAATACA
 1300 AGGTTGGCTT 2340
 E--> 1302 GGACTCAGAT GATCCACTTT TTGGTGGCTT CGGGAGAATT GATCATAATG
 1303 CCGAATATTT 2400
 E--> 1305 CACCTCTGAA GGATCGTATG ATGATCGTCC TCGTTCAATT ATGGTGTATG
 1306 CACCTAGTAG 2460
 E--> 1308 AACAGCAGTG GTCTATGCAC TAGTAGACAA ANTAGAAGNA

same

RAW SEQUENCE LISTING

DATE: 02/15/2002

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Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

1309 GAAGAAGAAG AAGAANCCGN 2520

1311 NGAAGAATT 2529

1313 (2) INFORMATION FOR SEQ ID NO: 18:

1315 (i) SEQUENCE CHARACTERISTICS:

1316 (A) LENGTH: 3231 base pairs

1317 (B) TYPE: nucleic acid

1318 (C) STRANDEDNESS: single

1319 (D) TOPOLOGY: linear

1325 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

E--> 1327 GATTTAATAC GACTCACTAT AGGGATTTTT TTTTTTTTTT TTTTAAAAAC

1328 CTCCTCCACT 60

E--> 1330 CAGTCTTGGG ATCTCTCTCT CTCTTCACGC TTCTCTTGGG GCCTTGAAC

1331 CAGCAATTTG 120

E--> 1333 ACACTCAGTT AGTTACACTC CTATCACTCA TCAGATCTCT ATTTTTTCTC

1334 TTAATTCCAA 180

E--> 1336 CCAAGGAATG AATTA AAAAGA TTAGATTGGA AGGAGAGAAG AAGAAAGATG

1337 GTGTATACAC 240

E--> 1339 TCTCTGGAGT TCGTTTTCCCT ACTGTTCCAT CAGTGTACAA ATCTAATGGA

1340 TTCAGCAGTA 300

E--> 1342 ATGGTGATCG GAGGAATGCT AATGTTTCTG TATTCTTGAA AAAGCACTCT

1343 CTTTCACGGA 360

E--> 1345 AGATCTTGGC TGAAAAGTCT TCTTACGATT CCGAATCCCG ACCTTCTACA

1346 GTTGACAGCAT 420

E--> 1348 CGGGGAAAAGT CCTTGTACCT GGAATCCAGA GTGATAGCTC

1349 CTCATCCTCA ACAGACCAAT 480

E--> 1351 TTGAGTTCAC TGAGACAGCT CCAGAAAATT CCCCAGCATC AACTGATGTG

1352 GATAGTTCAA 540

E--> 1354 CAATGGAACA CGCTAGCCAG ATTA AAACTG AGAACGATGA

1355 CGTTGAGCCG TCAAGTGATC 600

E--> 1357 TTACAGGAAG TGTGAAGAG TTGGATTTTG CTTCACTACT ACAACTACAA

1358 GAAGGTGGTA 660

E--> 1360 AACTGGAGGA GTCTAAAACA TTAAATACTT CTGAAGAGAC AATTATTGAT

1361 GAATCTGATA 720

E--> 1363 GGATCAGAGA GAGGGGCATC CCTCCACCTG GACTTGGTCA

1364 GAAGATTAT GAAATAGACC 780

E--> 1366 CCCTTTTGAC AAACATATCGT CAACACCTTG ATTACAGGTA TTCACAGTAC

1367 AAGAAAATGA 840

E--> 1369 GGGAGGCAAT TGACAAGTAT GAGGGTGGTT TGGAAGCTTT

1370 TTCTCGTGGT TATGAAAAAA 900

E--> 1372 TGGGTTTCAC TCGTAGTGCT ACAGGTATCA CTTACCGTGA GTGGGCTCCT

1373 GGTGCCCAGT 960

E--> 1375 CAGCTGCTCT CATTGGAGAT TTCAACAATT GGGACGCAA TGCTGACATT

1376 ATGACTCGGA 1020

E--> 1378 ATGAATTTGG TGTCTGGGAG ATTTTCTGCT CAAATAATGT GGATGGTTCT

1379 CCTGCAATTC 1080

E--> 1381 CTCATGGGTC CAGAGTGAAG ATACGCATGG AACTTTCATC

1382 AGGTGTTAAG GATTCCATTC 1140

E--> 1384 CTGCTTGGAT CAACTACTCT TTACAGCTTC CTGATGAAAT TCCATATAAT

1385 GGAATATATT 1200

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

E--> 1387 ATGATCCACC CGAAGAGGAG AGGTATGTCT TCCAACACCC
1388 ACGGCCAAAG AAACCAAAGT 1260
E--> 1390 CGCTGAGAAT ATATGAATCT CATATTGGAA TGAGTAGTCC GGAGCCTAAA
1391 ATTAATCAT 1320
E--> 1393 ACGTGAATTT TAGAGATGAA GTTCTTCCTC GCATAAAAAA CCTTGGGTAC
1394 AATGCGGTGC 1380
E--> 1396 AAATTATGGC TATTCAGAG CATTCTTATT ATGCTAGTTT TGGTTATCAT
1397 GTCACAAATT 1440
E--> 1399 TTTTTCACCC AAGCAGCCGT TTTGGAACGC CCGACGACCT TAAGTCTTTG
1400 ATTGATAAAG 1500
E--> 1402 CTCATGAGCT AGGAATTGTT GTTCTCATGG ACATTGTTCA CAGCCATGCA
1403 TCAAATAATA 1560
E--> 1405 CTTTAGATGG ACTGAACATG TTTGACGGCA CAGATAGTTG TTACTTTTCA
1406 TCTGGAGCTC 1620
E--> 1408 GTGGTTATCA TTGGATGTGG GATTCCCGCC TCTTTAACTA TGGAAACTGG
1409 GAGGTACTTA 1680
E--> 1411 GGTATCTTCT CTCAAATGCG AGATGGTGGT TGGATGAGTG CAAATTTGRT
1412 GGATTTAGAT 1740
E--> 1414 TTGATGGTGT GACATCAATG ATGTATACTC ACCACGGATT ATCGGTGGGA
1415 TTCCTGGGA 1800
E--> 1417 ACTACGAGGA ATACTTTGGA CTCGCAACTG ATGTRGATGC TGCCGTGTAT
1418 CTGATGCTGG 1860
E--> 1420 CCAACGATCT TATTCATGGG CTTTCCCGAG ATGCAATTAC CATTGGTGAA
1421 GATGTTAGCG 1920
E--> 1423 GAATGCCGAC ATTTTGTATT CCCGTTCAAG ATGGGGGTGT TGGCTTTGAC
1424 TATCGGCTGC 1980
E--> 1426 ATATGGCAAT TGCTGATAAA TGGATTGAGT TGCTCAAGAA ACGGGATGAG
1427 GATTGGAGAG 2040
E--> 1429 TGGGTGATAT TGTTTCATACA CTGACAAATA GAAGATGGTC GGAAAAGTGT
1430 GTTTCATACG 2100
E--> 1432 CTGAAAGTCA TGATCAAGCT CTAGTCGGTG ATAAAACTAT AGCATTCTGG
1433 CTGATGGACA 2160
E--> 1435 AGGATATGTA TGATTTTATG GCTTTGGATA GACCGTCAAC ATCATTAATA
1436 GATCGTGGGA 2220
E--> 1438 TAGCATTGCA CAAGATGATT AGGCTTGTA CTATGGGATT AGGAGGAGAA
1439 GGGTACCTAA 2280
E--> 1441 ATTTTCATGGG AAATGAATTC GGCCACCCTG AGTGGATTGA TTTCCCTAGG
1442 GCTGAACAAC 2340
E--> 1444 ACCTCTCTGA TGGCTCAGTA ATTCCCGGAA ACCAATTCAG TTATGATAAA
1445 TGCAGACGGA 2400
E--> 1447 GATTTGACCT GGGAGATGCA GAATATTTAA GATACCGTGG GTTGCAAGAA
1448 TTTGACCGGG 2460
E--> 1450 CTATGCAGTA TCTTGAAGAT AAATATGAGT TTATGACTTC AGAACACCAG
1451 TTCATATCAC 2520
E--> 1453 GAAAGGATGA AGGAGATAGG ATGATTGTAT TTGAAAAAGG AAACCTAGTT
1454 TTTGTCTTTA 2580
E--> 1456 ATTTTCACTG GACAAAAAGC TATTCAGACT ATCGCATAGG CTGGCTGAAG
1457 CCTGGAAAAT 2640
E--> 1459 ACAAGGTTGC CTTGGACTCA GATGATCCAC TTTTGGGTGG

same

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

TIME: 14:39:24

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

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1460 CTTTCGGGAGA ATTGATCATA      2700
E--> 1462 ATGCCGAATG TTTCACCTTT GAAGGATGGT ATGATGATCG TCCTCGTTCA
1463 ATTATGGTGT      2760
E--> 1465 ATGCACCTAG TAGAACAGCA GTGGTCTATG CACTAGTAGA CAAAGAAGAA
1466 GAAGAAGAAG      2820
E--> 1468 AAGTAGCAGT AGTAGAAGAA GTAGTAGTAG AAGAAGAATG AACGAACTTG
1469 TGATCGCGTT      2880
E--> 1471 GAAAGATTTG AACGCTACAT AGAGCTTCTT GACGTATCTG GCAATATTGC
1472 ATCAGTCTTG      2940
E--> 1474 GCGGAATTTT ATGTGACAAA AGGTTTGCAA TTCTTTCCAC TATTAGTAGT
1475 GCAACGATAT      3000
E--> 1477 ACGCAGAGAT GAAGTGCTGA ACAAACATAT GTAAATCGA TGAATTTATG
1478 TCGAATGCTG      3060
E--> 1480 GGACGGGCTT CAGCAGGTTT TGCTTAGTGA GTTCTGTAAA TTGTCATCTC
1481 TTTANATGTA      3120
E--> 1483 CAGCCCACTA GAAATCAATT ATGTGAGACC TAAAAAACA TAACCATAAA
1484 ATGGAAATAG      3180
E--> 1486 TGCTGATCTA ATGATGTTTT AANCCNNNNA AAAAAAAAAA AAAAATCTGA
1487 G      3231
1489 (2) INFORMATION FOR SEQ ID NO: 19:
1491 (i) SEQUENCE CHARACTERISTICS:
1492 (A) LENGTH: 2578 base pairs
1493 (B) TYPE: nucleic acid
1494 (C) STRANDEDNESS: single
1495 (D) TOPOLOGY: linear
1501 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:
E--> 1503 TCATTAAAGA GGAGAAATTA ACTATGAGAG GATCTCACCA TCACCATCAC
1504 CATGGGATCT      60
E--> 1506 TGGCTGAAAA GTCTTCTTAC AATTCCGAAT TCCGACCTTC TACAGTTGCA
1507 GCATCGGGGA      120
E--> 1509 AAGTCCTTGT GCCTGGAACC CAGAGTGATA GCTCCTCATC CTCAACAAAC
1510 CAATTTGAGT      180
E--> 1512 TCACTGAGAC ATCTCCAGAA AATTCCCCAG CATCAACTGA TGTAGATAGT
1513 TCAACAATGG      240
E--> 1515 AACACGCTAG CCAGATTAAA ACTGAGAACG ATGACGTTGA
1516 GCCGTCAAGT GATCTTACAG      300
E--> 1518 GAAGTGTTGA AGAGCTGGAT TTTGCTTCAT CACTACAAC ACAAGAAGGT
1519 GGTAAACTGG      360
E--> 1521 AGGAGTCTAA AACATTAAAT ACTTCTGAAG AGACAATTAT TGATGAATCT
1522 GATAGGATCA      420
E--> 1524 GAGAGAGGGG CATCCCTCCA CCTGGACTTG GTCAGAAGAT
1525 TTATGAAATA GACCCCTTT      480
E--> 1527 TGACAAACTA TCGTCAACAC CTTGATTACA GGTATTCACA GTACAAGAAA
1528 CTGAGGGAGG      540
E--> 1530 CAATTGACAA GTATGAGGGT GGTTTGGAAG CTTTTTCTCG TGGTTATGAA
1531 AAAATGGGTT      600
E--> 1533 TCACTCGTAG TGCTACAGGT ATCACTTACC GTGAGTGGGC
1534 TCCTGGTGCC CAGTCAGCTG      660
E--> 1536 CCCTCATTGG AGATTTCAAC AATTGGGACG CAAATGCTGA CATTATGACT

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*Same**Same*

RAW SEQUENCE LISTING

DATE: 02/15/2002

PATENT APPLICATION: US/10/056,454

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Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

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1537 CGGAATGAAT      720
E--> 1539 TTGGTGTCTG GGAGATTTT CTGCCAAATA ATGTGGATGG TTCTCCTGCA
1540 ATTCCTCATG      780
E--> 1542 GGTCCAGAGT GAAGATACGT ATGGACACTC CATCAGGTGT
1543 TAAGGATTCC ATTCCTGCTT      840
E--> 1545 GGATCAACTA CTCTTCACAG CTTCCTGATG AAATTCCATA TAATGGAATA
1546 TATTATGATC      900
E--> 1548 CACCCGAAGA GGAGAGGTAT ATCTTCCAAC ACCCACGGCC
1549 AAAGAAACCA AAGTCGCTGA      960
E--> 1551 GAATATATGA ATCTCATATT GGAATGAGTA GTCCGGAGCC TAAAAATTAAC
1552 TCATACGTGA     1020
E--> 1554 ATTTTAGAGA TGAAGTTCTT CCTCGCATAA AAAAGCTTGG GTACAATGCG
1555 GTGCAAATTA     1080
E--> 1557 TGGCTATTCA AGAGCATCTT TATTATGCTA GTTTTGGTTA TCATGTCACA
1558 AATTTTTTTT     1140
E--> 1560 CACCAAGCAG CCGTTTGGGA ACGCCCGACG ACCTTAAGTC TTTGATTGAT
1561 AAAGCTCATG     1200
E--> 1563 AGCTAGGAAT TGTGTGTTCT ATGGACATTG TTCACAGCCA TGCATCAAAT
1564 AATACTTTAG     1260
E--> 1566 ATGGACTGAA CATGTTTGAC GGCACCGATA GTTGTTACTT TCACTCTGGA
1567 GTCGTGGTT     1320
E--> 1569 ATCATTGGAT GTGGGATTCC CGCCTTTTTA ACTATGGAAA CTGGGAGGTA
1570 CTTAGGTATC     1380
E--> 1572 TTCTCTCAAA TGCGAGATGG TGGTTGGATG AGTTCAAATT TGATGGATTT
1573 AGATTGATG     1440
E--> 1575 GTGTGACATC AATGATGTAT ACTCACCACG GATTATCGGT GGGATTCACT
1576 GGGAACCTACG     1500
E--> 1578 AGGAATACTT TGGACTCGCA ACTGATGTGG ATGCTGTTGT GTATCTGATG
1579 CTGGTCAACG     1560
E--> 1581 ATCTTATTCA TGGGCTTTTC CCAGATGCAA TTACCATTGG TGAAGATGTT
1582 AGCGGAATGC     1620
E--> 1584 CGACATTTTG TATTCCCGTT CAAGATGGGG GTGTTGGCTT TGACTATCGG
1585 CTGCATATGG     1680
E--> 1587 CAATTGCTGA TAAATGGATT GAGTTGCTCA AGAAACGGGA TGAGGATTGG
1588 AGAGTGGGTG     1740
E--> 1590 ATATTGTTCA TACACTGACA AATAGAAGAT GGTCTGGAAA GTGTGTTTCA
1591 TACGCTGAAA     1800
E--> 1593 GTCATGATCA AGCTCTAGTC GGTGATAAAA CTATAGCATT CTGGCTGATG
1594 GACAAGGATA     1860
E--> 1596 TGTATGATTT TATGGCTCTG GATAGACCGC CAACATCATT AATAGATCGT
1597 GGGATAGCAT     1920
E--> 1599 TGCACAAGAT GATTAGGCTT GTAACATG GATTAGGAGG
1600 AGAAGGGTAC CTAAATTTCA     1980
E--> 1602 TGGGAAATGA ATTCGGCCAC CCTGAGTGGG TTGATTTCCC
1603 TAGGGCTGAA CAACACCTCT     2040
E--> 1605 CTGATGACTC AGTAATTTCC GGAAACCAAT TCAGTTATGA TAAATGCAGA
1606 CGGAGATTTG     2100
E--> 1608 ACCTGGGAGA TGCAGAATAT TTAAGATACC GTGGGTTGCA AGAATTTGAC
1609 CGGGCTATGC     2160

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RAW SEQUENCE LISTING

DATE: 02/15/2002


PATENT APPLICATION: US/10/056,454

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Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

E--> 1611 AGTATCTTGA AGATAAATAT GAGTTTATGA CTTCAGAACA CCAGTTCATA
1612 TCACGAAAGG 2220
E--> 1614 ATGAAGGAGA TAGGATGATT GTATTTGAAA AAGGAAACCT AGTTTTTGTC
1615 TTTAATTTTC 2280
E--> 1617 ACTGGACAAA AAGCTATTCA GACTATCGCA TAGGCTGCCT
1618 GAAGCCTGGA AAATACAAGG 2340
E--> 1620 TTGCCTTGGA CTCAGATGAT CCACTTTTTG GTGGCTTCGG GAGAATTGAT
1621 CATAATGCCG 2400
E--> 1623 AATATTTTAC CTTTGAAGGA TGGTATGATG ATCGTCCTCG TTCAATTATG
1624 GTGTATGCAC 2460
E--> 1626 CTTGTAGAAC AGCAGTGGTC TATGCACTAG TAGACAAAGA AGAAGAAGAA
1627 GAAGAAGAAG 2520
E--> 1629 AAGAAGAAGT AGCAGTAGTA GAAGAAGTAG TAGTAGAAGA
1630 AGAATGAACG AACTTGTG 2578



107056,454 20

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: *↑ must be - all responses must be on same line as heading*
~~(A) NAME: National Starch and Chemical Investment Holding Corporation~~
~~(B) STREET: 501 Silverside Road, Suite 27~~
~~(C) CITY: Wilmington~~
~~(D) STATE: Delaware~~
~~(E) COUNTRY: United States of America~~
~~(F) POSTAL CODE (ZIP): 19809~~

delete

(ii) TITLE OF INVENTION: Improvements in or Relating to Plant Starch Composition

(iii) NUMBER OF SEQUENCES: 20

(v) ~~(iv)~~ COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

(4) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE:
(B) STREET:
(C) CITY:
(D) STATE:
(E) COUNTRY:
(F) ZIP:

insist these mandatory headings and

(2) INFORMATION FOR SEQ ID NO: 1:

(4) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER:
(B) FILING DATE:

responses for a U.S. application

insist mandatory headings

EPO format is invalid for U.S. applications

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/056,454

DATE: 02/15/2002

TIME: 14:39:25

Input Set : A:\EP.txt

Output Set: N:\CRF3\02152002\J056454.raw

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 L:20 M:220 C: Keyword misspelled or invalid format, [(v) COMPUTER READABLE FORM:]
 L:6 M:200 E: Mandatory Header Field missing, [(i) APPLICANT:] of (1) Value not provided
 L:0 M:200 E: Mandatory Header Field missing, [(A) ADDRESSEE:] of (1)(iv)
 L:0 M:248 E: Inserted missing Mandatory Header Field, [(iv) CORRESPONDENCE ADDRESS:]
 L:0 M:247 C: Inserted Optional Header Field, [(viii) ATTORNEY/AGENT INFORMATION:]
 L:0 M:249 C: Inserted Mandatory Field, [(vi) CURRENT APPLICATION DATA:]
 L:0 M:249 C: Inserted Mandatory Field, [(A) APPLICATION NUMBER:]
 L:0 M:249 C: Inserted Mandatory Field, [(B) FILING DATE:]
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 M:254 Repeated in SeqNo=14
 L:833 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:14
 L:835 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:14
 L:847 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:14
 L:1042 M:254 E: No. of Bases conflict, Input:0 Counted:50 SEQ:16
 M:254 Repeated in SeqNo=16
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